

The University of Texas at El Paso
Department Kinesiology
KIN 4313 (Fall 2023) – Biomechanics (3.0 Credit Hours)

COURSE INFORMATION

LECTURE

Hours: Monday and Wednesday from 9:00 – 10:20 AM
CRN: 13231
Location: MGYM 118

LABORATORY

Hours: **Thursday** from 12:00 – 1:20 PM OR **Friday** from 9:00 – 10:20 AM
CRN: 13233 OR 15903
Location: MGYM 126

PROFESSOR INFORMATION

Jaeho Jang, Ph.D., ATC, CSCS (he/him/his)
Assistant Professor, Department of Kinesiology
Office Hours: Monday and Wednesday from 11:00 AM – 12:00 PM (or by appointment)
Office: Health Sciences and Nursing Bldg, Rm 452
Phone: 402-657-4040
Email: jjang2@utep.edu

TEACHING ASSISTANT

Daniel Vazquez
Graduate Student, Department of Kinesiology
Laboratory: Thursday from 12:00 – 1:20 PM (CRN: 13233)
Office Hours: Only by appointment (via zoom or in person)
Office: TBD
Phone: 915-873-5440
Email: danivazquez2399@gmail.com

Pablo Suarez
Graduate Student, Department of Kinesiology
Laboratory: Friday from 9:00 – 10:20 AM (CRN: 15903)
Office Hours: Only by appointment (via zoom or in person)
Office: TBD
Phone: (915) 867-2672
Email: pasuarez3@miners.utep.edu

COURSE DESCRIPTION

This course is designed to introduce biomechanics. It will explore statics and dynamics and, particularly, how these properties relate to kinetics and kinematics. This course will also explore biomechanical issues of human movement related to exercise/sport and injury. The course may use examples from research and mass media to complement the teaching materials in the course.

COURSE OBJECTIVES

At the end of this course, the student will have gained an understanding of:

- Forces and the properties of forces including vectors
- Forces and how they act to maintain balance and stability (Statics)
- Forces and how they act on bodies to produce motion (Dynamics)
- Description of motion that occurs when a force acts on a mass
- Description of the forces that cause motion
- Biomechanical relationships of each joint in the body
- Application of biomechanical concepts to human movement and function, as well as injury

GRADING SCALE

Unit exams (4):	10% each (40% total)	Laboratory Grade (Worksheets):	40%
Final exam (1):	20% (Comprehensive)		

A	≥ 90.0%
B	80.0%-89.9%
C	70.0%-79.9%
D	60.0%-69.9%
F	< 59.9%

Grades will be posted in Blackboard. Grades will not be rounded. For instance, if you have earned a 78.6%, you will earn a C; your percentage will not be rounded to a B. You are responsible for ensuring your Blackboard grades are accurate. Any inquiries about missing or incorrect grades must be submitted to me in writing within 48 hours of the grade being posted.

LABORATORY

Labs begin in the second week of the semester (in the week of the September 4th). Labs will cover what is taught in lecture and include more hands-on activities.

COMMUNICATION

Proper communication is vital and is the responsibility of both the student and the instructor. Please do not hesitate to discuss any class related issues with me. Some important notes:

- The instructor must be notified one week in advance if a student plans to miss a due date for an assignment or miss an exam due to an excused absence. You must also receive confirmation that you have notified me so that an alternate schedule/plan can be made.
- Conditions that are not planned but qualify as an excused absence may arise for students during the semester. It is the student's job to notify the instructor of the excused absence as soon as the student can safely do so. The instructor may require evidence that the absence qualifies as an excused absence (i.e. doctor's note for medical emergency, police record for traffic accident, etc) and approval from the Office of Dean of Students.

- It is the student's responsibility to be proactive in contacting the instructor if they need additional help, additional explanation, or have a question about their grade. This type of communication is best done in person during office hours or an agreed upon meeting time.

Classroom Requirements

- Be respectful to all, at all times.
- Do not be disruptive with your use of technology. The instructor may ask you to put a device away or to temporarily leave the classroom if they deem your use of technology disruptive.

COURSE RESOURCES

Textbook (Optional, not required)

McGinnis, Peter; Biomechanics of Sport and Exercise 4th Ed.; State University of New York, Cortland: Human Kinetics. (ISBN: 9781492571407)

Blackboard

Blackboard will be used to upload PowerPoint presentations, assignments, and grades for this class.

Worksheets

Most units will have a worksheet that will be covered in lab sessions and completed outside of regular class meetings. The worksheets are designed to help the student both understand and apply the in-class material covered in each unit. While I am not opposed to classmates working together in small groups to complete the worksheets, each student will be expected to submit their own responses to the worksheet. Worksheets will typically be due one week following their assignment. Some exceptions to this policy may occur throughout the semester so that we remain on schedule. I will try my best to limit these instances. Homework assignments will be submitted by the due date and time. Homework assignments will not be accepted later, and a grade of zero will be registered for that assignment.

Gradescope

We will be using Gradescope this semester, which allows us to provide fast and accurate feedback on your work. It also allows us to provide consistent and fair grading across you and your peers. Homework assignments will be submitted through Gradescope, and grades will be returned through Gradescope. As soon as grades are posted, you will be notified immediately so that you can log in and see your feedback/grading. You may also submit regrade requests if you feel we have made a mistake. A number of resources are available to you on the Gradescope student webpage: <https://help.gradescope.com/category/cyk4ij2dwi-student-workflow>

TECHNOLOGY REQUIREMENTS

If you do not have a word-processing software, you can download Word and other Microsoft Office programs (including Excel, PowerPoint, Outlook and more) for free via UTEP's Microsoft Office Portal. Click the following link for more information about [Microsoft Office 365](#) and follow the instructions.

IMPORTANT: If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP [Help Desk](#) as they are trained specifically in assisting with technological needs of students. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!

EXCUSED ABSENCES AND/OR COURSE DROP POLICY

According to UTEP Catalog, “At the discretion of the instructor, a student can be dropped from a course because of excessive absences or lack of effort. A grade of “W” will be assigned before the course drop deadline and a grade of “F” after the course drop deadline.” See Policies and Regulations in the UTEP Undergraduate Catalog for a list of excuse absences. Therefore, if I find that, due to non-performance in the course, you are at risk of failing, I will drop you from the course. I will provide 24 hours advance notice via email. For more information contact the [Registrar's Office](#) to initiate the drop process.

ALTERNATIVE MEANS OF SUBMITTING WORK IN CASE OF TECHNICAL ISSUES

I strongly suggest that you submit your work with plenty of time to spare in the event that you have a technical issue with the course website, network, and/or your computer. I also suggest you save all your work in a separate file as a back-up. This way, you will have evidence that you completed the work and will not lose credit. If you are experiencing difficulties submitting your work through the course website, please contact the UTEP Help Desk. You can email me your back-up document as a last resort.

INCOMPLETE GRADE POLICY

Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

ACCOMMODATIONS POLICY

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services](#) (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at cass@utep.edu, or apply for accommodations online via the [CASS portal](#).

SCHOLASTIC INTEGRITY

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the [Office of Student Conduct and Conflict Resolution \(OSCCR\)](#) for possible disciplinary action. To learn more, please visit [HOOP: Student Conduct and Discipline](#).

COPYRIGHT STATEMENT FOR COURSE MATERIALS

All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

OTHER RESOURCES

Technology Resources

- [Help Desk](#): Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

Academic Resources

- [UTEP Library](#): Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- [University Writing Center \(UWC\)](#): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- [Math Tutoring Center \(MaRCS\)](#): Ask a tutor for help and explore other available math resources.

Individual Resources

- [Military Student Success Center](#): Assists personnel in any branch of service to reach their educational goals.
- [Center for Accommodations and Support Services](#): Assists students with ADA-related accommodations for coursework, housing, and internships.
- [Counseling and Psychological Services](#): Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.

PROPOSED CLASS/TOPIC SCHEDULE:

The lecture and exam schedules are tentative and subject to change at the discretion of the instructor.

LECTURE		LABORATORY	
Date	Topic	Date	Topic
28-Aug	Course Overview	31 Aug or 1 Sep	No Lab
30-Aug	Introduction to Biomechanics		
4-Sep	LABOR DAY HOLIDAY – NO CLASS	7 or 8 Sep	Forces – Vector Calculation
6-Sep	Forces		
11-Sep	Forces	14 or 15 Sep	Forces – Friction
13-Sep	Forces		
18-Sep	EXAMINATION #1	21 or 22 Sep	Forces – Vector Voyage
20-Sep	Examination #1 Review		
25-Sep	Linear Kinematics	28 or 29 Sep	Linear Kinematics (1)
27-Sep	Linear Kinematics		
2-Oct	Linear Kinematics	5 or 6 Oct	Linear Kinematics (2)
4-Oct	Linear Kinematics		
9-Oct	Linear Kinetics	12 or 13 Oct	Linear Kinetics
11-Oct	Linear Kinetics		
16-Oct	EXAMINATION #2	19 or 20 Oct	Linear Kinematics – Calculating Your Vertical Jump Height
18-Oct	Examination #2 Review		
23-Oct	Work, Power, and Energy	26 or 27 Oct	Work, Power, and Energy
25-Oct	Work, Power, and Energy		
30-Oct	Torques and Moments of Force	2 or 3 Nov	Torques and Moments of Force
1-Nov	Torques and Moments of Force		
6-Nov	Torques and Moments of Force	9 or 10 Nov	Work, Power, and Energy Experiments
8-Nov	EXAMINATION #3		
13-Nov	Examination #3 Review	16 or 17 Nov	Angular Kinematics
15-Nov	Angular Kinematics		
20-Nov	Angular Kinematics	23 or 24 Nov	Angular Kinetics
22-Nov	Angular Kinetics		
27-Nov	Angular Kinetics	30 Nov or 1 Dec	Gait Analysis
29-Nov	EXAMINATION #4		
4-Dec	Examination #4 Review	7 or 8 Dec	No Lab
6-Dec	Final Review Session		
13-Dec	FINAL EXAMINATION (10:00 am – 12:45 pm)		

*NOTE: Final exams will only be held at the scheduled date and time. Students with multiple final exams within a 24-hour period will need to coordinate with me no later than **Friday, November 24** for rescheduling.*